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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,800	11/21/2003	Clifford H. Ray	021120.0041.000	2949
7590	06/20/2005		EXAMINER	
Mark A. Tidwell Suite 2100 112 East Pecan San Antonio, TX 78205-1521			MCELHENY JR, DONALD E	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,800

Applicant(s)

RAY ET AL.

Examiner

Donald E. McElheny, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) 70-79, 83-85 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-69, 80-83, 86, 87 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 70-79 and 83-85 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/09/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Applicant's election with traverse of Group I in the reply filed on May 05, 2005 is acknowledged. The traversal is on the ground(s) that method of Group I and the apparatus of Group II each require the specific methods steps of structural features of the other respective Group. Applicants allege no specific example of the differences between these Groups I and II were given by the examiner. Applicants also state that the Group I cannot be practiced without Group II, and vice-versa, but they fail provide an adequate and proper basis for why such would be the case and where such basis is found in the claimed subject matter -- but applicants only provide generalized intended use together or intent statements.

The argument that examiner's basis lacks support is not found persuasive because if applicants read the Restriction Office action dated 04-15-05 they would indeed find specific examples and mention of the distinct 2-way distinctness between Group I and Group II; namely that the Group II requires "housing ... structural content arrangements ..." are not found in Group I, that Group I requires steps to "communication aspects between plural acquisition units" not found in the later Groups (i.e. Group II and Group III). If applicants desire further evidence, they need only review independent claim 1, exemplary of the method claims found in Group I, which calls for various communications steps for transmission of seismic data or other data between at least two seismic acquisition units, none of which steps are found in claim 70, which is an exemplary claim of the system of Group II. Likewise, for 2-way distinctness (though not required), note the multitude of components found in claim 70, such as "casing", "battery", structural positioning of components within casing requirements, "local clock",

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a separate "receiving unit" with its own additional structural requirements that is in addition to preceding claim requirement of "at least two wireless seismic acquisition units". Applicants are invited to justify their own traverse statements by pointing out how each of these claimed features requirements in the apparatus claims are found and required in such as claim 1, and vice-versa how each method operation is seen found required and explicitly stated in the apparatus claim 70. Numerous other examples exist between the multitude of claims, which anyone taking a quick review can determine without need of a reading made to them. One of ordinary skill in the art would have readily considered and seen the potential of a multitude of other data transmission systems that might use the method steps of Group I, and likewise other different seismic operation methods that could be used with the system of Group II.

Applicants' traverse is completely lacking of any reasoning for traverse between Group III and prior Groups I & Group II. Therefore that portion of the restriction stands without traverse.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 70-79, and 83-85 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Groups II & III, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 05, 2005.

Applicants must cancel non-elected and withdrawn claims.

An action on the merits to the elected invention's claims 1-69, 80-82, 86 and 87 follows.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 13-69, 80-82, 86, 87 are rejected under 35 U.S.C. 102(a), (b) & (e) as being clearly anticipated by Kostelnicek et al. (3,886,494).

Note that for some interpretations of the claimed features with respect to the prior art one can interpret the claimed "sets", "sub-sets", "subsets", "array" as being the reference's use of either different groups of wireless seismic data acquisition units (e.g. units or geo-links) or as individual units (each being a subset of the total) within a cooperative total group of units, as either being units of different groups operating at separate times or as daisy chained units operating sequentially. Note the units may be powered off, or in a standby state, when they are not being used, and thus this feature alone meets the claimed feature of controlling transmission power or a unit's transmission range. Note the reference teaches the units are "preferably directional", and thus the alternative of "omnidirectional" is inherently taught and the units fully distinct by their own unique signal reception and transmission criteria to maintain

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operation distinction. Each unit is assigned a unique location ID code, so its specific unit and seismic survey field position is identifiable.

Note the claimed "beacon signal" found in some claims is met by any of the various timing or control signals sent between units, as they fully perform the equivalent operation of the arbitrary term "beacon signal". Units are alerted and respond to one another based upon signals there between, thus a beacon signal in performance.

Note some claims call for "capable of", which is met by the fact that each of the units in the reference may be preset, or reset by signal control, to various modes of operation, and thus do not have to be actually in a specific state as they are "capable of" having their operation states changed or reassigned.

The seismic data being "time stamped", as found in claim 69 for example, is met by the reference's teaching of the use of the master timing and control unit or the shot break transmitter which sends and marks the data recording time of seismic survey data. Also "discrete time signals" for the coded data signals also meets this claimed feature as such delineates the various units' signal components in their times of operations.

Claim 82 calls for "quality control data", which is met by the signals passed along to and between units to control their operating and transmission frequencies, their reference sync timing operations and communications between units, and thus assures quality control of synchronization between units and their transmitting operations.

Claims 86 and 87 call for each unit to have its own antenna parameters associated with an adjustable transmission directions. Such are met by the fact each

unit has its own antennas and how they are set up, including how they are deployed on each unit, their placement on the unit as well as site orientation within the seismic array, all of which these parameters control each unit's transmission signal directionality and effective transmission power characteristics between units.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostelnicek et al. (3,886,494).

Claims 11 and 12 call for the transmission connection between the receiving station to the control station to be either "fiber optic cable" or "data telemetry cable". The reference teaches that the prior art it itself improves over made use of various types of cable connections for telemetry of data between all the system components, including

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connections to and from the control and recording station components. While they preferably make use of wireless radio communication between components, at the end of the reference they teach that wireless communication between components may not always be possible due to signal blockage problems such as due to terrain at the seismic survey site, and therefore it may be desirable to revert to use of any type of available physical cable connection to complete the communications circuit. The examples given are coaxial cable or wave guide means. Thus the use of any alternative modes of physical signal connection between system components would have been obvious to one of ordinary skill in the art and not involve the concept of invention, including the use of "data telemetry cable" or more modern day "fiber optic cable" which was typically used throughout various communications arts for the same purpose as the teachings of this reference which is to avoid crosstalk between signal electrical wires. Applicants' specification supplies no criticality or unexpected results from the selection of such claimed features from that which was already notoriously well known in the prior art and which would have been routinely considered for use by those in the geophysics arts and seismic survey use.

8. Other prior art is cited as pertinence in also teaching the claimed invention features. Note that some of these references are even more appropriate in the sense they make use of more modern equipment practices, have additional operational features such as found typical of modern distributed communications networks where bidirectional and multimode communications may occur between sensor units, groups

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of units, such that even upon failure of one the system may continue fully operational and with stable communications.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald McElheny, Jr. whose telephone number is 571-272-2218. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoff Marc, can be reached on weekdays at telephone number 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Donald E. McElheny, Jr.
Primary Examiner
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